

Patent Claims

1. Arrangement for the production of photomasks, wherein at least one defect control system is connected to at least one repair system by a continuous data connection or online connection.
2. Arrangement according to claim 1, wherein a direct data exchange or an indirect exchange is carried out by means of a central device.
3. Arrangement according to claim 1 or 2, wherein at least one defect control system and at least one repair system are connected to one another by data in such a way that the results obtained on one of the systems are immediately available to the other system for further processing.
4. Arrangement according to claim 1, 2 or 3, wherein an AIMS system is provided as defect control system.
5. Arrangement according to claim 1, 2 or 3, wherein an electron beam system is provided for defect control.
6. Arrangement according to one of the claims, wherein an electron beam-based deposition system is provided as repair system.
7. Arrangement according to one of claims 1 to 6, wherein a laser ablation system is provided as repair system.
8. Arrangement according to one of claims 1 to 7, wherein an AFM (Atomic Force Microscope) is provided as a measurement system and/or repair system.
9. Arrangement according to one of claims 1 to 8, wherein a FIB (Focused Ion Beam) system is provided as a measurement system and/or repair system.
10. Arrangement according to one of the preceding claims, wherein a connection for data exchange is carried out by the control units of the system.

11. Arrangement according to one of the preceding claims, wherein a common control unit is provided for coordinating between measurement and repair.
12. Arrangement according to one of the preceding claims, wherein the defect control system and repair system are arranged in a common measurement chamber.
13. Arrangement according to claim 12, wherein a vacuum is generated or a protective atmosphere is provided in the common chamber.
14. Arrangement according to one of the preceding claims, wherein a transport system is provided between the defect control system and repair system.
15. Arrangement according to one of the preceding claims, wherein a common platform with adjusting devices is provided for the defect control system and repair system.
16. Arrangement according to one of the preceding claims, wherein the direction of the measurement axis and repair axis intersect at a common point and/or the working areas of the measurement system and repair system overlap.
17. Arrangement according to claim 16, wherein the direction of the repair axis is inclined relative to the measurement axis of the AIMS system.
18. Arrangement according to one of the preceding claims, wherein the measurement system is arranged on the side of the mask remote of the structure side and the repair system is arranged on the structure side.
19. Arrangement according to claim 18, wherein the measurement system works in transmission mode.
20. Arrangement according to claim 18, wherein the measurement system detects the radiation transmitted through the mask, wherein additional illumination is coupled in on the side remote of the measurement system, preferably by means of a beam splitter or deflecting element.
21. Arrangement, particularly according to one of the preceding claims, wherein an AIMS system is operated under vacuum conditions.

22. Method for the production of photomasks, particularly with an arrangement according to one of claims 1 to 20, wherein a defect control system conveys detected defects via a data connection for data exchange to at least one repair system that controls the repair process based on the determined defects.

23. Method according to claim 22, wherein measurement and repair are carried out simultaneously.

24. Method according to claim 22, with a sequence of repair and measurement that is carried out repeatedly.

25. Method according to one of claims 20 to 24, wherein the illumination light of the measurement system is used for removal of material.